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REMARKS:

Claims 1-48 are pending.

Claims 34, 40 and 44 have been cancelled.

In Claim 1, a formula has been added to describe the metallocene catalyst compound. Support for this amendment can be found at pages 28-31, paragraph 0075. In Claim 1, the polymerization medium now comprises less than 25 volume% diluent. Support for this amendment can be found at paragraph 7. Claim 2 has been amended to include "which one of the metallocene catalyst compounds comprises a substituted or unsubstituted silyl bridged bis-indenyl metallocene." Support for this amendment can be found at paragraph 73. Claims 1 and 2 have been amended to include "in the absence of hydrogen." Support for this amendment can be found at paragraphs 36 and 53, and Claim 36. Claims 1 and 2 have been amended to include a branching index (g') of .97 or less. Support for this amendment can be found at paragraph 55 and Claim 40. Claims 1, 2, 3 and 4, have been amended to include no diene monomers added to the polymerization medium. Support for this amendment can be found at paragraph 61.

Applicant's claimed invention relates to a new process of preparing a polymer composition at a temperature of 70°C or greater, where the polymer is branched crystalline polypropylene having about 0.0 wt% to about 2.0 wt% ethylene, a heat of fusion of 70 J/g or more, and a branching index of .97 or less. The polymerization medium comprises a specific kind of metallocene catalyst compound (e.g. bridged substituted indenenes), less than 30 volume% diluent in some embodiments, and less than 25 volume% diluent in others, no added dienes and no hydrogen. This process produces a polypropylene with very desirable properties, such as commercially valuable processability, enhanced melt strength and no need for a cross-linking agent. This process also eliminates undesirable properties such as gel formation, which occur with other polypropylene manufacturing processes.

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Claim Objections

Claims 27 and 29 were objected to for improper spelling and have been amended to reflect correct spelling. Applicant respectfully requests that the objection be withdrawn.

Claim Rejections - 35 U.S.C. §112

Claims 25-29 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. As the Examiner suggested, claims 25-29 have been amended to delete the word "supported." Applicant respectfully requests that the rejection be withdrawn.

Claim Rejections - 35 U.S.C. §102

Claims 1-18, 20-27 and 29-47 were rejected under 35 U.S.C. §102(e) as anticipated by US 20020013440 ("Agarwal"). The Examiner states that Agarwal discloses, in Examples 1-9, the preparation of polypropylene comprising 1, 9-decadiene, at 70°C or 74°C, in the presence of hydrogen, a cocatalyst and metallocene. In contrast, the claimed invention relates to a polymer process to produce branched crystalline polypropylene (having a branching index (g') of 0.97 or less) comprising no added diene, no hydrogen, a specific metallocene catalyst compound, and less than 30% diluent. Agarwal's disclosure differs from the claimed invention in that, among other things, it requires diene and hydrogen. The claimed invention is novel over Agarwal because Agarwal does not suggest a process comprising, among other things, reaction temperatures above 70°C, in combination with a process in the absence of dienes and the absence of hydrogen to produce a polymer with a branching index (g') of 0.97 or less. Applicant respectfully requests that the rejection be withdrawn.

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Claims 1, 5, 7-10, 21-24, 29, 34-43, 47 and 48 were rejected under 35 U.S.C. §102(e) as anticipated by EP 1 195 391 ("Debras"). The Examiner states that Debras discloses, in Examples 1-3, the making of branched isotactic and syndiotactic homopolypropylene using metallocene catalyst and MAO at 80°C and 30 bar in what appears to be a slurry polymerization. Examiner also states that Debras did not measure branching index or heat of fusion, but these properties would be inherent.

Applicant respectfully disagrees and submits that the claimed invention is novel over Debras because Debras does not disclose or suggest a process with less than 30% diluent, use of a substituted or unsubstituted silyl bridged bis-indenyl metallocene or producing a branched polymer with branching index at .97 or less. Applicant refers Examiner to Debras' Figure 1 which demonstrates that Debras' polypropylenes are not branched. We know that Debras' example polypropylenes are not branched because none of Debras' examples show a maximum curvature point in the relationship of shear modulus $\log G''$ to loss shear modulus $\log G'$, which would indicate that they are branched. If the line sloped upwards, reached a maximum, then sloped downward, this would indicate that the polypropylenes are branched. However, Debras' linear relationships, with no maximum, indicate that there is no branching. Therefore, Debras' polypropylenes differ from the claimed invention in that Debras' are not branched. Hence, since Debras' process does not produce Applicant's branched polymer, Applicant's claimed invention is not anticipated by Debras. Applicant respectfully requests that the rejection be withdrawn.

Claim Rejections - 35 U.S.C. §103(a)

Claim 28 was rejected under 35 U.S.C. §103(a) as unpatentable over Agarwal. Examiner states that one of ordinary skill in the art would be motivated to use alternative conventional activators as suggested in Agarwal at [0073].

Applicant respectfully disagrees and submits that the claims are not obvious because there is no disclosure in the above-mentioned reference of an absence of dienes,

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an absence of hydrogen, or a diluent present at less than 30 volume% to produce a polymer having a branching index (g') < .97. Applicant respectfully requests that the rejection be withdrawn.

Applicant respectfully solicits a notice of allowance. Applicant invites the Examiner to telephone the undersigned attorney if there are any issues outstanding which have not been presented to the Examiner's satisfaction.

Respectfully submitted,



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9-30-05

Date

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